

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1 (Currently Amended): In a transport stream demultiplexor device receiving an input transport stream comprising a plurality of data packets and including a filter device for removing one or more predetermined packets to form a partial transport stream comprising packets of interest, a real-time data remultiplexing system comprising:

mechanism for synchronously detecting in real time, the presence of a gap in said partial transport stream where predetermined packets have been removed and generating a signal indicating said gap location;

a mechanism for directly retrieving packet data having new content from a memory storage device, and storing said retrieved packet data into a staging buffer device for queued storage prior to insertion into said partial transport stream; and,

a multiplexor device responsive to said flag signal for synchronously pulling a queued data packet from said staging buffer device in real time and inserting said pulled packet into said gap as said partial transport stream is being transported on a real-time basis, wherein said retrieving mechanism enables concurrent re-filling of said staging buffer as queued data is pulled from said buffer.

2 (Original): The real-time data remultiplexing system as claimed in Claim 1, wherein said buffer device comprises a first in first out (FIFO) buffer for storing said new data content.

3 (Original): The real-time data remultiplexing system as claimed in Claim 1, wherein said buffer device generates a signal indicating availability of new data packet for complete insertion at a gap location.

4 (Original): The real-time data remultiplexing system as claimed in Claim 1, wherein said staging buffer device generates request signal for input to said retrieving mechanism for initiating direct retrieval of new data packets from said memory storage.

5 (Original): The real-time data remultiplexing system as claimed in Claim 4, further comprising a processor device and memory storage device for storing new data content to be inserted, said processor device generating address and size information of available new data content to be stored in said buffer device.

6 (Original): The real-time data remultiplexing system as claimed in Claim 5, further comprising means responsive to said request signal for pulling said data packets from said memory device based on said address and size information.

7 (Original): The real-time data remultiplexing system as claimed in Claim 6, wherein said means responsive to said request signal includes address generator device for generating addresses in said memory storage where new data content is to be pulled.

8 (Original): The real-time data remultiplexing system as claimed in Claim 1, further including timer mechanism for periodically creating gaps in said transport stream for periodically inserting new data content in said partial transport stream.

9 (Original): The real-time data remultiplexing system as claimed in Claim 1, wherein said partial transport stream includes data packets including audio, video and navigation data payloads.

10 (Currently Amended): In a transport stream demultiplexor device receiving an input transport stream comprising a plurality of data packets and including a filter device for removing one or more predetermined packets to form a partial transport stream comprising packets of interest, a real-time data remultiplexing method comprising:

synchronously detecting in real time, the presence of a gap in said partial transport stream where predetermined packets have been removed and generating a signal indicating said gap location;

directly retrieving packet data having new content from a memory storage device, and storing said retrieved packet data into a staging buffer device for queued storage prior to insertion into said partial transport stream; and,

synchronously pulling in real time, a queued data packet from said buffer device in response to said indicating signal and inserting said pulled packet into said gap as said partial transport

stream is being transported on a real-time basis; wherein said partial transport stream having new data content is communicated on a real-time basis.

11 (Original): The real-time data remultiplexing method as claimed in Claim 10, further including the step of enabling concurrent re-filling of said staging buffer as queued data is pulled from said buffer.

12 (Original): The real-time data remultiplexing method as claimed in Claim 10, further including the step of generating a signal indicating availability of new data packet for complete insertion at a gap location.

13 (Original): The real-time data remultiplexing method as claimed in Claim 11, further including the step of generating a request signal for initiating direct retrieval of new data packets from said memory storage.

14 (Original): The real-time data remultiplexing method as claimed in Claim 13, further comprising the step of: generating address and size information of available new data content to be stored in said buffer device.

15 (Original): The real-time data remultiplexing method as claimed in Claim 14, further comprising the step of: responding to said request signal for pulling data packets from a system memory device based on said address and size information.

16 (Original): The real-time data remultiplexing method as claimed in Claim 15, wherein said step of pulling data packets from a system memory device further includes the step of generating addresses in said memory storage where new data content is to be pulled.

17 (Original): The real-time data remultiplexing method as claimed in Claim 10, further including the step of periodically creating gaps in said transport stream for periodically inserting new data content in said partial transport stream.

18 (Original): The real-time data remultiplexing method as claimed in Claim 10, wherein said partial transport stream includes data packets including audio, video and navigation data payloads.